



"3) a polar ethylene copolymer which may be a ethylene carbon monoxide terpolymer also having vinyl acetate monomers (col.3, last paragraph --col.4, line 26). **This component corresponds to applicants component (1).**"

In contrast to this conclusion, the Examiner's attention is directed to Column 4, lines 27-38, of the Spelthann reference wherein the following further description of this polar copolymer is found as follows:

"The polar ethylene copolymers as described above are grafted with 0.01-10% (preferably 0.5-2%) by weight of reactive groups selected from glycidyl acrylate or methacrylate, and of an alpha, beta-unsaturated carboxylic acid derivative thereof. If a glycidyl acrylate is used to functionalize the olefin polymer compatibilizing polymer (2), then the polar ethylene copolymer (3) is functionalized with a carboxylic acid or a derivative thereof. The reverse also applies. The epoxy and acid groups are reactable and do react under melt-process or blending conditions so as to obtain a compatible polymer composition."

In other words, the Spelthann reference of record is clear teaching that: (i) one polymeric component is functionalized with reactive epoxy groups and another is functionalized with reactive acid groups; (ii) the epoxy groups and acid groups react under melt-processing; and (iii) the purpose of this reaction is to achieve compatibility of the polymer phase. In view of this teaching and consistent with the wording of the last subsection of claim 1 (from which all claims of Spelthann depend), the invention disclosed in Spelthann reference requires one of the two polar components to be a functionalized copolymer having reactable epoxy groups associated with the presence of glycidyl acrylate or glycidyl methacrylate comonomer. No such epoxy groups are present in the claimed compositions of the instant invention. Furthermore, the purpose and function of the epoxy groups in Spelthann reference is clearly to react at melt-processing or blending conditions in order to achieve a compatible polymer composition starting with a non-polar

thermoplastic polyolefin component and two polar polyolefin components. Presumably from this description the two polar components (one containing the epoxy group and the other the acid related group) react with each other under processing or blending conditions and in the process of reacting the polar component becomes compatible with the non-polar components. Implicitly from this analysis there is incompatibility in the initial mixture of two polar components and one non-polar component and during processing and because of the reaction of the epoxy group with the acid group the polymeric composition becomes compatible.

In direct contrast to this analysis of the Spelthann reference, the compositions of the instant invention differ from the compositions of the cited reference in that no epoxy functionality is present. As such, the subject matter sought to be patented differs from the teachings in the reference in that the grafted functionality of component (3) of the instant disclosure (i.e., the EVA or polyolefin with grafted carboxylic acid or carboxylic acid anhydride) does not perform the same or similar function. In the instant invention, the carboxylic acid moiety reacts with the inorganic filler of component (4); see page 5, lines 21-28, of the specification. This intern leads to compatibilization of the polymer/inorganic filler composition and not merely compatibility of polar and non-polar polymer components as found in the prior art. The results of the respective disclosures also differ, in that the cited reference does not teach how to achieve compatibility between the polymer components and inorganic filler at very high loading levels such Applicants' showing of 60 to 70% inorganics (see page 5, line 19).

In view of the above differences there is a clear basis for the withdrawal the §102(b) rejection and such action is requested. Also, in view of the lack of disclosure of the composition and the failure to disclose or even remotely suggest how the subject matter sought to be patented functions, the way it functions and the results achieved, it is felt that the Spelthann et al. reference does not and can not represent a *prima facie* showing of obviousness. Consequently, it

is felt that there is a basis for the withdrawal of the §103(a) and such action is requested.

With respect to the Examiner's reliance on the teachings found at col.3, last paragraph – col.4, line 26, it is respectfully submitted that this description is directed to a precursor composition and not the actual grafted polymer containing epoxy groups used in the composition. As such, the teaching in the Spelthann related to the addition of filler such as talc is not equivalent to a teaching of the high loading of inorganics to the instant polymer compositions. Again, the following paragraph starting at col. 4, line 27 clear supports this observation by stating that these ethylene copolymers are grafted with a reactive group (see line 29).

At present, Claims 1 through 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Spelthann (U.S. 5,434,217) in view of patents issued to Hugh et al. (U.S. 5,346,963) and Opsahl et al. (U.S. 4,851,463). Reconsideration of this rejection is requested.

In asserting the above rejection the Office Action states that Opsahl (col 3) relates that filler type flame retardants for LLDPE blends with ethylene vinyl acetate carbon monoxide having an additional polyethylene copolymer containing a COOH acid group (col. 2, lines 44-62) are typically magnesium hydroxide or its aluminum counterpart. The Office Action also asserts that Hughes relates that the graft modified polyethylene, corresponding to Spelthann's carboxyl modified polyethylene is known to act as a compatibilizer for inorganic fillers in polyolefin matrices (col. 4, lines 25 et seq.) and this compatibilization is known to occur regardless of whether the base resin is a single resin or any combination of the polymers".

In response to this rejection it is respectfully submitted that the teachings found in the secondary references (Opsahl et al. and Hughes et al.) are insufficient to correct the deficiencies associated with the teachings of the primary reference and as such the combination does not and can not serve as a *prima facie* showing of

obviousness under §103. More specifically, the primary reference Spelthann teaches that the carboxyl group on the functionalized polar component reacts with the epoxy functionalized component. As such, Spelthann is teaching that the carboxyl group is no longer present after the reaction. The Examiner's logic associated with the use of the secondary reference revolves around the presence of the carboxyl group. In view of this difference there is no basis for combining the references to make a *prima facie* showing of obviousness. The proposed combination is a typical example of pure hindsight prompted by Applicants' disclosure. Furthermore, even if a *prima facie* showing were made, these references fail to disclose or teach how to achieve compatibility between the specifically claimed polymer components of the instant invention and inorganic filler at very high loading levels such Applicants' showing of 60 to 70% inorganics (again see page 5, line 19). It is felt that this showing of unexpected results is sufficient to overcome even a *prima facie* showing of obviousness and as such there is a clear basis for the withdrawal of this §103 rejection. Such action is requested.

In view of the above brief remarks it is felt that all claims are now in condition for allowance and such action is requested. Should the Examiner believe that an interview or other action in Applicants' behalf would expedite prosecution of the application, the Examiner is urged to contact Applicants' attorney by telephone at (302) 992-6824.

Respectfully submitted,



Robert B. Stevenson  
Attorney for Applicants  
Registration No. 26,039  
Telephone: 302-992-6824  
Fax: 302-992-2953

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